



## Maternal exposure to heatwave and preterm birth in Brisbane, Australia

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### Abstract:

**OBJECTIVE:** To quantify the short-term effects of maternal exposure to heatwave on preterm birth. **DESIGN:** An ecological study. **SETTING:** A population-based study in Brisbane, Australia. **POPULATION:** All pregnant women who had a spontaneous singleton live birth in Brisbane between November and March in 2000-2010 were studied. **METHODS:** Daily data on pregnancy outcomes, meteorological factors, and ambient air pollutants were obtained. The Cox proportional hazards regression model with time-dependent variables was used to examine the short-term impact of heatwave on preterm birth. A series of cut-off temperatures and durations were used to define heatwave. Multivariable analyses were also performed to adjust for socio-economic factors, demographic factors, meteorological factors, and ambient air pollutants. **MAIN OUTCOME MEASURE:** Spontaneous preterm births. **RESULTS:** The adjusted hazard ratios (HRs) ranged from 1.13 (95% CI 1.03-1.24) to 2.00 (95% CI 1.37-2.91) by using different heatwave definitions, after controlling for demographic, socio-economic, and meteorological factors, and air pollutants. **CONCLUSIONS:** Heatwave was significantly associated with preterm birth: the associations were robust to the definitions of heatwave. The threshold temperatures, instead of duration, could be more likely to influence the evaluation of birth-related heatwaves. The findings of this study may have significant public health implications as climate change progresses.

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### Resource Description

#### Exposure :

weather or climate related pathway by which climate change affects health

Temperature

**Temperature:** Extreme Heat

#### Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

#### Geographic Location:

resource focuses on specific location

# Climate Change and Human Health Literature Portal

Non-United States

**Non-United States:** Australasia

**Health Impact:** ☒

specification of health effect or disease related to climate change exposure

Developmental Effect, Injury

**Developmental Effect:** Cognitive/Neurological, Reproductive

**Mitigation/Adaptation:** ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

**Population of Concern:** A focus of content

**Population of Concern:** ☒

populations at particular risk or vulnerability to climate change impacts

Children, Low Socioeconomic Status, Pregnant Women

**Resource Type:** ☒

format or standard characteristic of resource

Research Article

**Timescale:** ☒

time period studied

Time Scale Unspecified

**Vulnerability/Impact Assessment:** ☒

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content